
Switches recommended for use with RingCentral VoIP services

RingCentral, Inc.

999 Baker Way,
San Mateo, CA 94404
(888) 528-RING
www.RingCentral.com

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RingCentral has tested the following switches with RingCentral VoIP services:

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Netgear ProSafe Series Smart Switches

Netgear Prosafe switches are an affordable line of switches that come in several sizes and configurations. They are rack-mountable, but can also sit on a desk or table. Netgear offers 16-port 24-port, and 48-port versions. You can also get them in fully gigabit versions, or with just a 2 gigabit port. Most small businesses don't need the gigabit feature. Retail prices range from about \$170 - \$600 for the different models. The tested model is the 16-port gigabit switch, GS716T, but configuration is nearly identical for all switches in this family. The switches are described on the Netgear site: <http://www.netgear.com/Products/Switches/SmartSwitches.aspx>. You can purchase Netgear products directly from this site, or from many Internet retailers. Note that the Netgear switch does have a fan, which you may find loud if placed near your employees.

Netgear switches don't provide PoE features to power your phones without a power cord. PoE is a great feature that makes it easy to power all your phones using just an Ethernet—no power adapter or cord required.

All Polycom phones and the Linksys 942 support PoE. Linksys 941 phones and ATAs don't support PoE. For a PoE router, consider another manufacturer or Netgear's next line of switches, the ProSafe Advanced Smart Switches. The Advanced Smart Switches are similar to configure and available in 8-48 port versions, with and without PoE. A 24-port switch with PoE costs about \$380. You can find these switches here: <http://www.netgear.com/Products/Switches/AdvancedSmartSwitches.aspx>.

The following describes the configuration process for the GS716T 16-port Smart Switch, but the process is very similar for other Smart Switches, and Advanced Smart Switches.

- Follow Netgear instructions to unpack and connect switch to power.
- Plug port 15 into your router or upstream switch.
- Plug computers and phones into ports 1-14.
- Install the included SmartWizard discovery software on your PC.
- Make sure your PC is connected into the switch.
- Launch the discovery software.
- If you see a prompt that your router is using the default IP address, click the **DHCP Refresh** button and wait a few moments for that to complete.
- Double-click the discovered switch to launch the configuration.
- When prompted, the default password is **password**.
- After logging in, change your password under the **password** menu on the left.
- Click the **QoS** menu on the left.
- Change the top-right dropdown from **Port Based QoS** to **ToS Based**.
- Change the drop-down to the right of 5 to **High**. Click **Apply**.

- Settings are immediately active.

ToS Based

Priority	QoS	Priority	QoS	Priority	QoS	Priority	QoS
0	Lowest	1	Lowest	2	Lowest	3	Lowest
4	Lowest	5	High	6	Lowest	7	Lowest

Apply

Linksys / Cisco SLM224G and related Smart Switches

Linksys Smart switches are an affordable line of switches that come in several sizes and configurations. They are rack-mountable, but can also sit on a desk or table. Cisco offers 24-port and 48-port versions. Most small businesses do not need the gigabit feature on some of the models. Retail price is about \$200 for the tested 24-port non-PoE model. The tested model is the 24-port non-POE switch, SLM224G, but configuration process is nearly identical for all switches in this family. The switches are described on the Cisco site: http://www.cisco.com/cisco/web/solutions/small_business/products/routers_switches/small_business_smart_switches/index.html, and can be purchased from many Internet retailers.

These switches offer PoE features to power your phones without a power cord. PoE is a great feature that lets you power all your phones using just an Ethernet adapter—no power adapter or cord required. All Polycom phones and the Linksys 942 support PoE. Linksys 941 phones and ATAs don't support PoE. For a PoE router choose one of the switch models ending in P – the SLM224P or SLM48P. A 24-port switch with PoE is approximately \$330.

The following describes the configuration process for the SLM224G 24-port Smart Switch, but the process is very similar for other SLM series Smart Switches.

- Follow Cisco instructions to unpack and connect your switch to power.
- Plug port G1 into your router or upstream switch.
- Plug computers and phones into ports .
- Assure your PC is connected into the switch.
- Launch a browser and load 192.168.1.254.
 - Note:
 - The configuration utility seems to work well only with the Internet Explorer browser.
 - If your computer is not given a 192.168.1.x address, you may need to temporarily change your computer's network configuration to a subnet mask of 255.255.0.0 to access the device.

- When prompted use these defaults:
 - username: admin
 - password: blank
- After logging in, change your password by clicking **Admin** at the top, then click the admin user in the **local users table**, then change the password and click **Update**.
- If needed, change the IP address of the switch under **Setup > Network Settings**.
- Setting up QoS:
 - Click on the **QoS** tab at the top.
 - In the first table, in the **class of service** row 4, change the **Queue** value to '2'.
 - Scroll down and click **Save Settings**.
- The switch features many other settings that are beyond the scope of this document; the default configuration will work for most users.

Adtran NetVanta 1234 Switch

Adtran NetVanta switches are a relatively advanced line of fully managed switches. They are more difficult to configure, but offer more options for complex networks. This document will outline the basic QoS settings, but you may need to work with an experienced network administrator for additional configuration. You can learn more about the NetVanta 1200 series switches, and other Adtran switches, here: <http://www.adtran.com/web/page/portal/Adtran/group/4>. The non-PoE 24-port NetVanta 1234 costs about \$420, and is available from a variety of Internet retailers.

The series also includes PoE switches so you can power your phones without a power supply. Simply order a model that ends in **PoE**. The PoE version of the same router, the NetVanta 1234 PoE costs about \$1,100.

The following describes the configuration process for the NetVanta 1234 24-port switch, but the process is very similar for other NetVanta series switches.

- Follow Adtran instructions to unpack and connect the switch to power.
- Plug port G1 into your router or upstream switch.
- Plug computers and phones into ports.
- Make sure your PC is connected into the switch.
- Change your PC's IP address to 10.10.10.2, subnet to 255.255.255.0, and default gateway to 10.10.10.1, as described in the Adtran documentation.
- Launch a browser and load 10.10.10.1.

- When prompted use these defaults:
 - username: admin
 - password: blank
- After logging in, change your password by clicking Passwords on the left.
 - In the **Login Configuration** section, in the username field type 'admin' and in the two following password fields enter the password you would like to use.
 - Click **Add** to save this new password.
- Setting up QoS:
 - Click the **Data** category on the left.
 - Click the **Class of Service** link on the left.
 - Uncheck the box for **Default Weights**.
 - In the **Queue Weights** table, enter 10, 20, 30, 40 for the 4 rows.
 - In the **Class of Service Priority** table select the radio button in Row 2 for column 4 to move that selection (see screenshot).

Class of Service

Basic configuration for Class of Service.

Queue Settings

Queue Type: Strict Weighted Round Robin [Set the Queue Type](#)

Default Weights [Set the default weight for each queue.](#)

Queue	Weight
1	10
2	20
3	30
4	40

Queue 4 Expedite: [Set Queue 4 to Expedite Mode.](#)

Class of Service Priority

Queue	0	1	2	3	4	5	6	7
1	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

[Configure Class of Service priorities into queues.](#)

- Click **Apply** at the bottom of the screen.
- You can now return your computer to normal IP settings.